and (6) of this section should be repeated.

(7) If a chart recorder is used, identify and record the most recent zero and span response as the pre-analysis values.

(8) If ADC equipment is used, electronically record the most recent zero and span response as the pre-analysis values.

(9) Measure (or collect a sample of) the emissions continuously during each mode of the test cycle. Indicate the start of the test, the range(s) used, and the end of the test on the recording medium (chart paper or ADC equipment). Maintain approximately the same flow rates and system pressures used in paragraph (d)(5) of this section.

(10)(i) Collect background HC, CO, CO_2, and NO_X in a sample bag (optional).

(ii) Measure the concentration of CO_2 in the dilution air and the diluted exhaust for particulate measurements.

(11) Perform a post-analysis zero and span check for each range used at the conditions specified in paragraph (d)(5) of this section. Record these responses as the post-analysis values.

(12) Neither the zero drift nor the span drift between the pre-analysis and post-analysis checks on any range used may exceed 3 percent for HC, or 2 percent for NO_X. CO, and CO_2, of full scale chart deflection, or the test is void. (If the HC drift is greater than 3 percent of full-scale chart deflection, hydrocarbon hang-up is likely.)

(13) Determine HC background levels (if necessary) by introducing the background sample into the overflow sample system.

(14) Determine background levels of NO_X. CO, or CO_2 (if necessary).

(e) HC hang-up. If HC hang-up is indicated, the following sequence may be performed:

(1) Fill a clean sample bag with background air.

(2) Zero and span the HFID at the analyzer ports.

(3) Analyze the background air sample bag through the analyzer ports.

(4) Analyze the background air through the entire sample probe system.

(5) If the difference between the readings obtained is 2 percent or more of the HFID full scale deflection:

(i) Clean the sample probe and the sample line;

(ii) Reassemble the sample system;

(iii) Heat to specified temperature; and

(iv) Repeat the procedure in this paragraph (e).

§ 92.130 Determination of steady-state concentrations.

(a)(1) For HC and NO_X emissions, a steady-state concentration measurement, measured after 300 seconds (or 840 seconds for notch 8) of testing shall be used instead of an integrated concentration for the calculations in § 92.132 if the concentration response meets either of the criteria of paragraph (b) of this section and the criterion of paragraph (c) of this section.

(2) For CO and CO_2 emissions, a steady-state concentration measurement, measured after 300 seconds (or 840 seconds for notch 8) of testing shall be used. The provisions of paragraphs (b) through (f) of this section do not apply for CO and CO_2 emissions.

(b) (1) The steady-state concentration is considered representative of the entire measurement period if the time-weighted concentration is not more than 10 percent higher than the steady-state concentration. The time-weighted concentration is determined by integrating the concentration response (with respect to time in seconds) over the first 360 seconds (or 900 seconds for notch 8) of measurement, and dividing the area by 360 seconds (or 900 seconds for notch 8).

(2) A steady-state concentration is considered representative of the entire measurement period if the estimated peak area is not more than 10 percent of the product of the steady-state concentration and 360 seconds (or 900 seconds for notch 8). The estimated peak area is calculated as follows, and as shown in Figure B130–1 of this section):

(i) Draw the peak baseline as a straight horizontal line intersecting the steady-state response.

(ii) Measure the peak height from the baseline with the same units as the steady-state concentration; this value is h.

(iii) Bisect the peak height by drawing a straight horizontal line halfway between the top of the peak and the baseline.

(iv) Draw a straight line from the top of the peak to the baseline such that it intersects the response curve at the same point at which the line described in paragraph (b)(2)(iii) of this section intersects the response curve.

(v) Determine the time between the point at which the notch was changed and the point at which the line described in paragraph (b)(2)(iv) of this section intersects the baseline; this value is t.

(vi) The estimated peak area is equal to the product of h and t, divided by 2.

(c) In order to be considered to be a steady-state measurement, a measured response may not vary by more than 5 percent after the first 60 seconds of measurement.

(d) For responses meeting either of the criteria of paragraph (b) of this section, but not meeting the criterion of paragraph (c) of this section, one of the following values shall be used instead of a steady-state or integrated concentration:

(1) The highest value of the response that is measured after the first 60 seconds of measurement (excluding peaks lasting less than 5 seconds, caused by such random events as the cycling of an air compressor); or

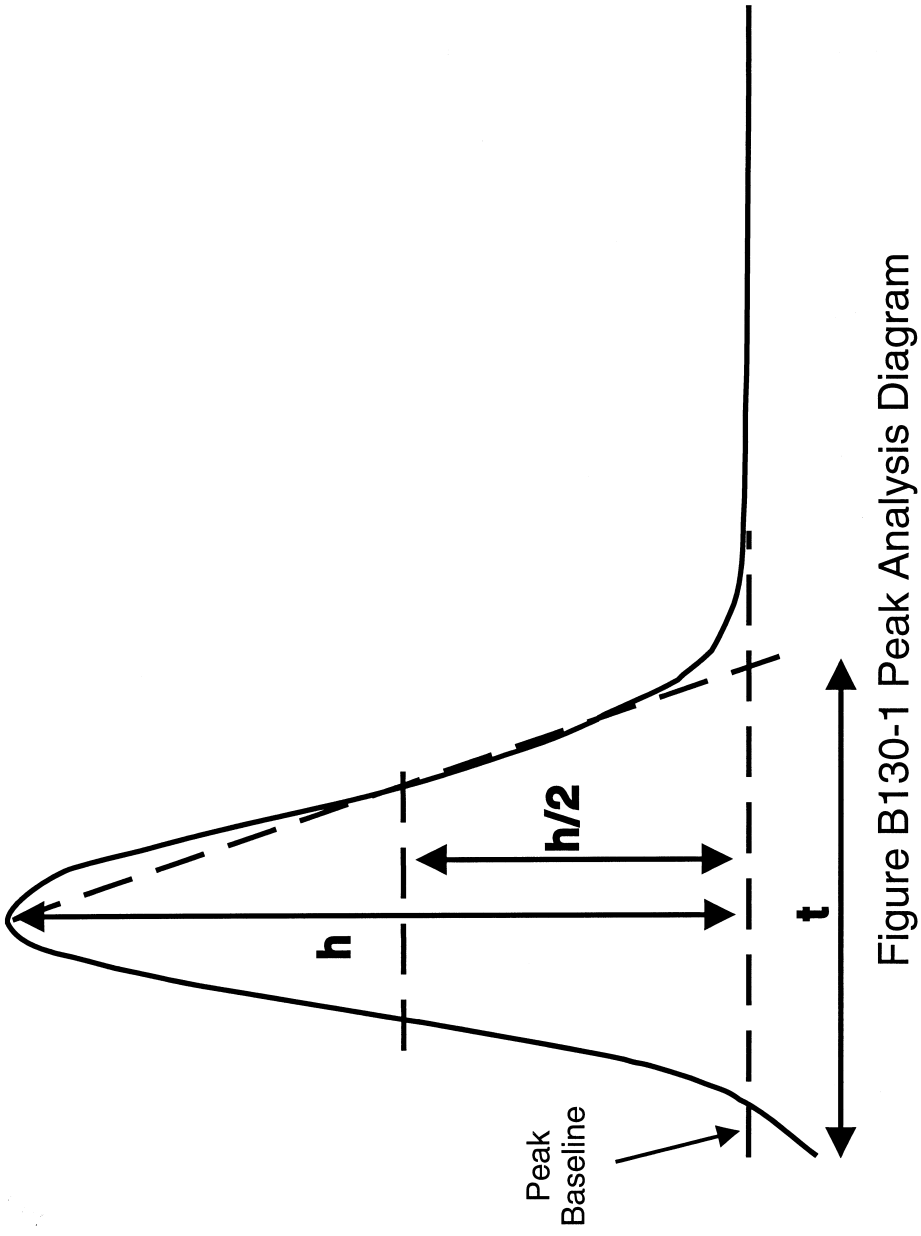
(2) The highest 60-second, time-weighted, average concentration of the response after the first 60 seconds of measurement.

(e) For responses not meeting the criterion in paragraph (c) of this section, the Administrator may require that the manufacturer or remanufacturer identify the cause of the variation, and demonstrate that it is not caused by a defeat device.

(f) The integrated concentration used for calculations shall be from the highest continuous 120 seconds of measurement.

(g) Compliance with paragraph (b)(2) of this section does not require calculation where good engineering practice allows compliance to be determined visually (i.e., that the area of the peak is much less than the limits set forth in paragraph (b)(2) of this section).

FIGURE TO § 92.130



§ 92.131 Smoke, data analysis.

The following procedure shall be used to analyze the smoke test data:

(a) Locate each throttle notch test mode, or percent rated power setting test mode. Each test mode starts when